State of Utah
Natural Resource Damage Trustee
Request for Public Comment
Southwest Jordan Valley Ground Water Cleanup
Project Summary

Announcement

The State of Utah Natural Resource Damage Trustee announces a public comment period from September 2, 2003, through October 1, 2003, to receive comments on a proposed ground water treatment project in the Southwest Jordan Valley (SWJV). Extraction and treatment of ground water from the sulfate contaminated zones over the next 40 years will remove high concentrations of sulfate and metals and provide municipal-quality drinking water to the public in the Affected Area. By removing contaminated water from the underlying aquifer, the project will also improve ground water quality and prevent further migration of the contamination in the valley.

History

In 1983, the U.S. Environmental Protection Agency (EPA) and the State of Utah began investigating contamination from mining-related activities in the Oquirrh Mountains. In 1986, the State of Utah filed a Natural Resource Damage (NRD) Claim against Kennecott Utah Copper Corporation (Kennecott) for ground water damage in the SWJV. In 1995, the Court accepted a settlement agreement between the State of Utah, Kennecott, and the Salt Lake Water Conservancy District, now the Jordan Valley Water Conservancy District (District), and issued a Consent Decree.

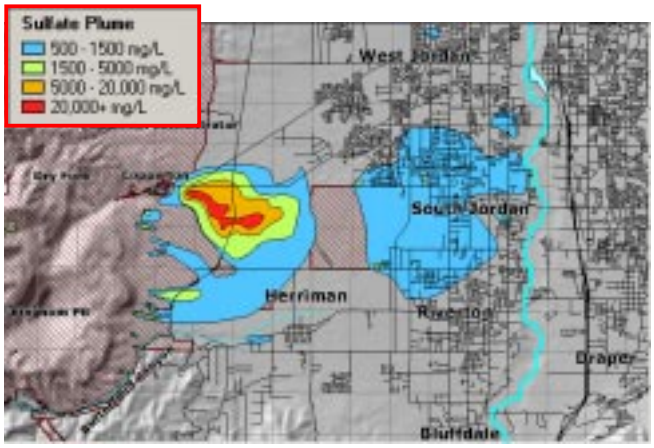

Figure 1. Ground water contamination in Southwest Jordan Valley. Red area identifies acid plume composed of acidic water, heavy metals, and elevated concentrations of sulfate.

Consent Decree

The NRD Consent Decree required Kennecott to meet the following requirements: (1) Conduct and complete a Remedial Investigation and Feasibility Study (RI/FS) under the Superfund process, (2) Drill a well or wells into the low pH/heavy metals ground water plume and begin to remove contaminants, (3) Complete additional source control measures, specifically the Eastside Collection System and the Bingham Creek Cutoff System, and (4) Establish a Trust Fund with an initial cash settlement and an irrevocable letter of credit (ILC). This proposed plan focuses on the forth requirement. The Trust Fund was established in order to "restore, replace, or acquire the equivalent of the surface or ground water resources for the benefit of the public in the Affected Area…." The ground water treatment plan proposed by Kennecott and the District is designed to accomplish that goal.

Under the Consent Decree, the ILC can be reduced if Kennecott treats the contaminated water in accordance with four specified criteria (paragraphs V.D.2.b.i-iv of the Consent Decree):

- The treated water must be accepted by a purveyor of Municipal and Industrial (M&I) water with the water rights to put the water to beneficial use;
- The extraction of contaminated water must proportionately prevent or reduce the spread of the aquifer contamination;
- The supply of water from the project is a sustainable water supply for 40 or more years; and
- Kennecott can demonstrate that its project does not materially increase the Trustee's unit cost to produce the remainder of the 7,000 acre-feet per year of M&I water.

Proposed Project

The Affected Area has been divided into two zones, A and B (Figure 2), consistent with the two sulfate plumes. The primary source for the Zone A plume was the historic Large and Small Bingham Reservoirs. A secondary source was the uncontrolled release of water from the historic waste rock dumps on the eastern edge of the Oquirrh Mountains and other mining and non-mining sources. The primary source for the Zone B plume was the historic South Jordan Evaporation Ponds.

Zone A contains two types of contamination. The core of the plume in Zone A is highly acidic and contains elevated concentrations of sulfate and heavy metals (Figure 1 - red area). The larger but less contaminated portion of Zone A is impacted by sulfate (Figure 1 - orange, green, and blue areas). The proposed extraction system for Zone A is composed of two extraction well sets: acid plume (core) extraction and sulfate plume extraction.

Extraction of acidic water in the Zone A plume will withdraw 2,400-4,000 acre feet of water in order to reduce the acid and metals contamination. The extracted acid core water will be neutralized and delivered via the Kennecott Tailings Pipeline to the Magna Tailings Impoundment.

In the sulfate portion of the Zone A plume, three wells (No. 1193, 1200, and 1147) are proposed to extract the contaminated ground water. These wells will have a combined extraction rate of approximately 3,000 gallons per minute (gpm). The water from these three wells will be delivered through a pipe to the Zone A reverse osmosis treatment plant (RO Plant). The extracted water will be treated by Kennecott to the State Drinking Water Standards and will be made available by the District to the public in the Affected Area through the four municipalities: West Jordan, South Jordan, Riverton, and Herriman. Three thousand five hundred (3,500) acre-feet per year (ac-ft/yr) of M&I water will be provided. Treatment concentrates from the Zone A RO Plant, along with the extracted acid core water, will be delivered via the Kennecott Tailings Pipeline to the Magna Tailings Impoundment. The tailings slurry and concentrate mix will treat the acid core water and neutralize the acidity with some assistance by the addition of lime to the combined waste flow when needed.

The Zone B ground water contamination plume primarily contains moderate concentrations of sulfate. The proposed extraction system for Zone B is composed

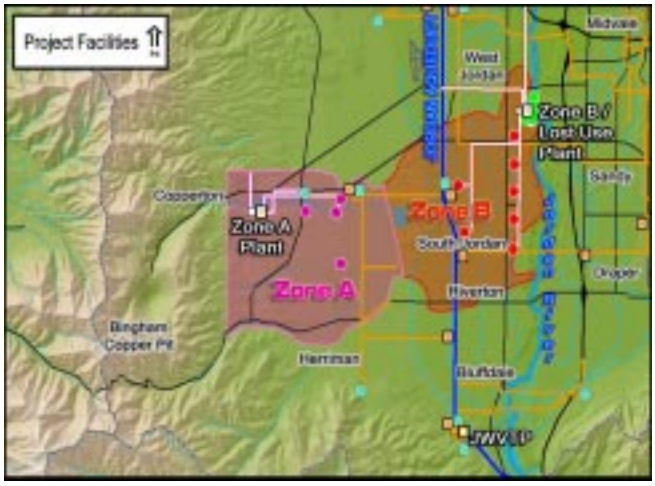

Figure 2. Plume outline and treatment facility locations.

of two different well sets: deep groundwater extraction through seven wells (No. B1-B7) and shallow ground water extraction through five wells (No. SW1-SW5).

The deep-water extraction wells will be pumped at a combined rate of approximately 2,665 gpm. This water will be delivered to the Zone B RO Plant and treated by the District to provide 3,500 ac-ft of M&I water per year. The treated water will be delivered to the public in the Affected Area through the four municipalities.

The shallow water extraction wells will be pumped at a combined rate of approximately 1,860 gpm. This water will be used, after treatment in the Zone B RO Plant, to make up for the water "lost" in the treatment process. Lost Use refers to the water lost in the concentrate (waste) stream of the Zone A and B treatment facilities. The combined flow of treated water from the Zone B operations will equate to 4,735 ac-ft per year, or more.

The combined treatment concentrates from the Zone B RO plant are proposed for discharge to the Jordan River.

Use of the Trust Fund

Kennecott and the District propose to request a reduction of the ILC based upon the reduction provisions of the Consent Decree (paragraphs V.D.2.b and V.D.4).

The existing ILC would be converted to two replacement ILCs of equal value. The replacement ILC for Zone A would fund the construction and operation of the Zone A treatment facility by Kennecott, as long as Kennecott meets the criteria for a full reduction of the ILC. The replacement ILC for Zone B would be used by the Trustee (as if it had been cashed out) to "restore,

replace, or acquire the equivalent of the lost resource." The replacement ILC for Zone B would fund the construction and operation of the Zone B treatment facility by the District, as long as the District maintains the required rate of water production.

It is further proposed that the cash settlement portion of the Trust Fund be used to fund the construction and operation of the Lost Use portion of the Zone B treatment plant by the District.

Kennecott and the District will provide the additional funds necessary for construction and operation of the project.

Glossary of Terms

Affected Area: the area in the southwestern portion of the Salt Lake Valley where surface and ground water have been injured by Kennecott's mining and leaching operations.

Acre-foot: equivalent to an acre of land covered by one foot of water. One acre foot is equal to 325,851 gallons. It is also equivalent to the average amount of water a family of four uses in a year.

Bingham Creek Cutoff System: a series of cutoff walls (dams) keyed into bedrock constructed in the various drainages located along the eastern edge of the Oquirrh Mountains.

Cash Settlement: the amount of money ($9,000,000) provided by Kennecott at the time of the NRD settlement to be used by the Trustee to "restore, replace, or acquire the equivalent of the surface or ground water resources for the benefit of the public in the Affected Area."

Eastside Collection System: a series of toe ditches, leach water collection canals, and cutoff walls that parallel the waste rock dumps along the eastern front of the Oquirrh Mountains. This system is used to prevent acid mine drainage water from entering the Southwest Jordan Valley.

Irrevocable Letter of Credit: letter of credit in the initial amount of $28,000,000 that was provided by Kennecott to the Trustee at the time of the settlement and has been held as part of the Trust Fund. The Letter of Credit escalates at 7% annually.

Municipal and Industrial (M&I) water: water with chemical concentrations at or below 250 mg/l sulfate and 500 mg/l total dissolved solids for the area west of the Welby Canal, or 250 mg/l sulfate and 800 mg/l total dissolved solids for the area east of the Welby Canal, and which otherwise meets primary drinking water standards for other contaminants.

Record of Decision: the EPA document signed in December 2000 that describes the cleanup operations required for Zone A.

Resource: land, fish, wildlife, biota, air, water, ground water, drinking water supplies, and other resources belonging to, managed by, held in trust by, or otherwise controlled by, the United States, any state or local government, foreign government, or Indian tribe.

Reverse Osmosis: a system used to treat water to M&I standards. Water is pushed through a series of membranes to remove the contaminants of concern.

Superfund or CERLCA: the federal Comprehensive Environmental Response, Compensation, and Liability Act, as amended by the Superfund Amendments and Reauthorization Act 42, U.S.C § 9601 et seq.

Documents

This summary briefly explains the proposed cleanup plan. The project documents contain the specific details of the proposal. These documents are available on the Internet at www.deq.utah.gov Copies of the documents will also be available for public viewing on business days from 8:30 a.m. to 4:30 p.m. at the West Jordan City Hall, 8000 S. Redwood Road, West Jordan, and at the Utah Department of Environmental Quality, 168 North 1950 West, Salt Lake City.

- *Agreement Among the Trustee for Natural Resources for the State of Utah, Jordan Valley Water Conservancy District, and Kennecott Utah Copper Corporation*

- *Project Agreement Between Kennecott Utah Copper Corporation and Jordan Valley Water Conservancy District*

- *Proposal to the Utah State NRD Trustee and USEPA CERCLA Remedial Project Manager for a Groundwater Extraction and Treatment Remedial Project in the Southwestern Jordan Valley*

Two other documents are provided by the Trustee to assist those interested in understanding the basis of the proposed project: *1995 Natural Resource Damage Consent Decree and Supporting Document* and the *Project Presentation.*

Southwest Jordan Valley Ground Water Cleanup Project
Public Comment Period and Hearings

The State of Utah Natural Resource Damage Trustee is holding a 30-day public comment period from **September 2 to October 1, 2003**, to solicit comments from the public on the proposed Southwest Jordan Valley Ground Water Cleanup Project. Two public hearings are also scheduled for:

Wednesday, September 10, 2003
6:30 to 7:00 p.m.: informal review of information
7:00 to 9:30 p.m.: presentation of plan, question-and-answer period, and public comment
West Jordan City Hall, Council Chamber, 8000 S. Redwood Road, West Jordan

Thursday, September 25, 2003
3:30 to 4:00 p.m.: informal review of information
4:00 to 6:30 p.m.: presentation of plan, question-and-answer period, and public comment
Utah Department of Environmental Quality, Room 101, 168 North 1950 West, Salt Lake City

Public comments can also be provided to the Trustee via e-mail at nrdtrustee@utah.gov or by fax to 801-536-0061 or by mail to Utah Department of Environmental Quality, NRD Trustee, P.O. Box 144810, Salt Lake City, UT 84114-4810. Comments must be transmitted or postmarked on or before October 1, 2003.

For more information, please call 801-536-4402.

Individuals needing special assistance in accordance with the American With Disabilities Act may contact Charlene Lamph at 801-536-4413 (TDD: 801-536-4414).

State of Utah
Utah Department of Environmental Quality
NRD Trustee
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